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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|--------------------------------|------------------|
| 10/070,910 | 03/13/2002 | Florence L'Alloret | 220757USOPCT | 2997 |
| 22850 | 7590 | 07/15/2004 | | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | EXAMINER FUBARA, BLESSING M | |
| | | | ART UNIT 1615 | PAPER NUMBER |

DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|---------------------------------------|--|--|
| Office Action Summary | Application No. 10/070,910 | Applicant(s) L'ALLORET, FLORENCE | |
| | Examiner Blessing M. Fubara | Art Unit 1615 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 5, 7 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 8-17 and 19-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Examiner acknowledges receipt of request for extension of time, international search report, amendment and remarks filed 03/15/04.

Priority

1. In the last office action, acknowledgment was made of applicant's claim for foreign priority based on an application filed in France on 01/15/01. It is noted, however, that applicant has not filed a certified copy of the French application as required by 35 U.S.C. 119(b). It is noted that the certified copy was not submitted with the amendment of 03/15/04.

Specification

Although the abstract can be corrected at allowance of the claims, an objection was made to the abstract because the abstract is written in three paragraphs. The abstract of the disclosure is objected to because the abstract of the disclosure is written in three paragraphs. And MPEP § 608.01 (f) requires that the abstract be a brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. Correction is required.

Claim Rejections - 35 USC § 112

1. The rejection of claims 1-17 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is withdrawn because the relevant claims are amended and the issues in question are addressed.

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2. However, claims 3-5 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are written in such a way that it is not immediately clear where the Markush group ends or it is not clear what parts really make up the Markush group. This is further explained below.

Claim Objections

3. The objection to claims 5, 6-14, 16 and 17 under 37 CFR 1.75(c) as being in improper form because of improper multiple dependencies is withdrawn because of the amendment to the claims.

Observation:

4. The claims are generally narrative and indefinite, failing to conform to current U.S. practice. They appear to be a literal translation into English from a foreign document.

a) Claim 3, line 4 recites "from the group consisting of:

- ...". The use of the "-" makes the claim run together and at times, it is unclear where and when the Markush group begins and ends. Using lower case alphabets to identify the parts of the group in the Markush grouping may make the claims flow and be better identified. For example, claim 3 starting at line 4 will read like this:

---from the group consisting of:

(a) (meth)acrylic acid;

- (b) vinyl monomers of formula (1a):
- (c) maleic anhydride;
- (d) itaconic acid;
- (e) vinyl alcohol of the formula $\text{CH}_2=\text{CHOH}$; and
- (f) vinyl acetate of the formula $\text{CH}_2=\text{CHOCOCH}_3$.

A Markush group should end with ---and ...---

The part of (b) that starts with “in which:” should be properly identified so that it does not run into (c)

Also, on page 3, part of claim 3, “X is selected from the group consisting of alkyl oxides -OR’- in which R’...” In this case the group should have at least two things to select from. It is not clear if “-OR’-” is the alkyl oxide and if the “-OR’-“ is the alkyl oxide, then the use of the group consisting of may be improper.

The above observation also applies to claims 4, 5 and 7.

In claim 4, it appears that monomer B is selected from the group consisting of

- (a) vinyl monomers ...;
- (b) N-vinyl lactams ...;
- (c) vinyl ethers ...;
- (d) styrene ...;
- (e) dimethyldiallylammonium ...; and
- (f) vinylacetamide.

Further, as in claim 3, the definition of R and X, which are part of (a) needs to be properly made in the recitation.

Examiner respectfully requests applicants to place the claims to conform with current US practice. These claims, 3-5 and 7 appear to be confusing.

Request for Election

Examiner thanks applicants for electing acrylic units for the A-monomer and N-vinylcaprolactam for the B-monomer with traverse. Applicants' traversal in on the grounds that the examiner failed to show that elected species of polymer can be separately patented. In response to the traversal it is firstly noted that various molecules for the A monomer are claimed; the monomers are (meth)acrylic acid, vinyl monomers of formula (1a), maleic anhydride, itaconic acid, vinyl alcohol and vinyl acetate. Examiner will be required to search the art for all these groups for the A-monomer. There are also different groups for the B-monomers and this will also place a burden on the examiner if all the possible B- and A-monomers are not found in a single art. However, upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Thus, in light of the election claims 5, 7 and 18 are not treated with regards to prior art.

Claim Rejections - 35 USC § 102

5. Claims 1-4, 6, 8-17, 19-25 remain rejected under 35 U.S.C. 102(b) as being anticipated by Torgerson et al. (US 5,730,966).

The first aspect of applicants' argument discusses the copolymer of Torgerson and in this aspect applicants state that the backbone of Torgerson's polymer is hydrophobic and flexible

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while the side chain is hydrophilic and rigid; and it is this nature that affords the polymer to be bi-phasic, which results in a copolymer that has two distinct glass transition temperatures with the backbone having a Tg of less than about 0 °C at about -10 °C to about -130 °C and the Tg of greater than 20 °C at about 25 °C to about 200 °C. Applicants went further to state that the hydrophilic side chains are of the polyalkyleneglycol type.

In response to this aspect, it is noted that, in column 7, line 45 and column 8, line 17, acrylic acid is listed as one of the monomers for the A-monomers. The existence of the hydrophilic side chains in one phase is because the side chains closely associate together according to column 4, lines 64-67 of the Torgerson art. Torgerson describes the backbone of the copolymer as that part of the copolymer not containing the side chain. If aguendo, as per applicants, the side chains are polyalkylene glycol type, it is noted that the copolymer of the instant claims are derived from A-monomers that can be acrylic acid and B-monomers that can be vinylcaprolactam and the applicants have not excluded from the claimed invention side chains of the polyalkyleneglycol type. It is also noted that the monomers of the prior art meet the limitations of the monomers of the claimed invention.

Applicants further state that the A-units in the prior art are “preferably” not water soluble and continued to cite the bottom of column 10 as listing methacrylate esters as water insoluble monomers for the A-units; applicants conclude that the solubility of the copolymers in the prior art is directly attributable to the hydrophilic side chains from the B-monomer.

In response to the assertion immediately above, it is respectfully noted that the A-monomer can be acrylic acid as disclosed in column 7, line 45 and column 8, line 17. There is thus a disclosure in Torgerson for acrylic acid type A-monomer. Therefore, on the contrary, the

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solubility of the copolymer of Torgerson is not necessarily directly attributable to the hydrophilic B-monomer because the solubility can also come from the acrylic A-monomer.

Applicants further state that the solubility of the instant copolymer is due to the solubility of the backbone, and in this case is the acrylic acid units; and the inference that the backbone is insoluble or hydrophobic comes from the failure of the prior art to specifically literally state that the backbone is hydrophilic while the prior art categorically discloses that the side chain is hydrophilic. Applicants then conclude that because the prior art lacks explicit language as to the water solubility of the copolymer backbone, the backbone of the copolymer of the prior art is not water-soluble or is not hydrophilic even if the backbone contains some water-soluble monomers.

6. Applicants' arguments filed 03/25/04 have been fully considered but they are not persuasive. This is in light of the disclosure of Torgerson describing the B monomer as hydrophilic (column 9, lines 1 and 15) and in column 10, line 26 Torgerson specifically discloses vinylcaprolactams and allylcaprolactams as B-monomers. The prior art does not have to explicitly use the language water soluble to describe the backbone. The prior art teaches the copolymer of the instant claims where the A-unit is acrylic acid and the B-unit is a caprolactam. It is thus not clear how applicants arrived at the conclusion that the solubility of the copolymer of the prior art has to only come from the B-monomer.

Applicants concluded by stating that because the backbone of the copolymer of the prior art must have a T_g of below 0 °C and the polyacrylic acid of the examples of the instant text has a T_g well above 0 °C, applicants believe that the prior art neither anticipates nor renders obvious the instant claims.

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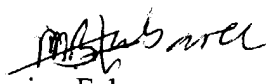
In response, it is noted and as clearly admitted by applicants, the copolymer of the prior art has a Tg for the backbone that is less than about 0 °C and a Tg for the side chains that is well above 0 °C, specifically about 25 °C to about 200 °C.

7. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicants' cooperation is requested in correcting any errors of which applicants may become aware in the specification.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blessing M. Fubara whose telephone number is (571) 272-0594. The examiner can normally be reached on 7 a.m. to 3:30 p.m. (Monday to Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman K. Page can be reached on (571) 272-0602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Blessing Fubara
Patent Examiner
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